

METHOD OF AND SYSTEM FOR DERIVING INERTIAL-AIDED DEVIATIONS FOR AUTOLAND SYSTEMS DURING GPS SIGNAL INTERRUPTIONS

ABSTRACT OF THE DISCLOSURE

Deriving inertial-aided deviations for autoland systems during GPS signal interruptions involving an inertial reference system and a GPS landing system can include converting position coordinates of an aircraft from the inertial reference system to runway, lateral, and vertical coordinates. After this conversion, the method calibrates runway distance and lateral distance based on the converted position coordinates from the inertial reference system using runway distance and lateral distance from the GPS landing system with a third-order calibration filter when the aircraft is below a first height above terrain and calibrates vertical distance based on the converted position coordinates from the inertial reference system using vertical distance from the GPS landing system with a second-order calibration filter when the aircraft is below the first height above terrain. The method uses the calibrated runway, lateral, and vertical distances for deviation computations when GPS signals are interrupted below a second height above terrain.